

**In the Claims:**

Please amend claims 1, 5, 7 and 11, and please cancel claims 4 and 6, as indicated below.

1. (Currently amended) A monitoring system, comprising:

a first chemical vessel containing a first chemical mixture;

a second chemical vessel containing a second chemical mixture; [[and]]

a sensor configured to selectively receive a first sample flow of said first chemical mixture from said first chemical vessel and to selectively receive a second sample flow of said second chemical mixture from said second chemical vessel, wherein said sensor is configured to measure a first sample attribute of said first sample flow and a second sample attribute of said second sample flow;

a supply distribution system configured to selectively transport said first sample flow and said second sample flow to said sensor;

a purge fluid supply, wherein said supply distribution system is further configured to selectively transport a purge fluid flow from said purge fluid supply to said sensor;

a drain configured to receive fluids; and

a return distribution system, wherein said return distribution system is configured to transport purge fluids from said sensor to said drain, and wherein said return distribution system is configured to selectively transport said first sample flow from said sensor to said first chemical vessel or to said drain,

and wherein said return distribution system is configured to selectively transport said second sample flow from said sensor to said second chemical vessel or to said drain.

2. (Original) The monitoring system of claim 1, wherein said sensor is a concentration sensor configured to measure concentration, and wherein said first sample attribute is a first sample concentration of a first chemical within said first sample flow, and wherein said second sample attribute is a second sample concentration of said first chemical within said second sample flow.

3. (Original) The monitoring system of claim 2, wherein said first sample flow comprises a liquid, and wherein said second sample flow comprises a liquid.

4. (Canceled)

5. (Currently amended) The monitoring system of claim [[4]] 1, wherein said supply distribution system is configured to transport said first sample flow and said second sample flow to said sensor at a substantially constant flow rate during operation.

6. (Canceled)

7. (Currently amended) A [[The]] monitoring system ~~of claim 1, comprising:~~

a first chemical vessel containing a first chemical mixture;

a second chemical vessel containing a second chemical mixture; and

a sensor configured to selectively receive a first sample flow of said first chemical mixture from said first chemical vessel and to selectively receive a second sample flow of said second chemical mixture from said second chemical vessel, wherein said sensor is configured to measure a first sample

attribute of said first sample flow and a second sample attribute of said second sample flow;

wherein said sensor is configured to measure a first sample attribute value for said first sample attribute and a second sample attribute value for said second sample attribute, and further comprising a control system configured to receive said first sample attribute value and said second sample attribute value from said sensor, and wherein said control system comprises a display unit configured to display said first sample attribute value and said second sample attribute value.

8. (Original) The monitoring system of claim 7, wherein said sensor is configured to measure a plurality of first sample attribute values for said first sample flow, and wherein said control system is configured to receive said plurality of first sample attribute values from said sensor and to filter said plurality of first sample attribute signals to produce a filtered first sample attribute value, and wherein said control system is configured to display said filtered first sample attribute value on said display unit, and wherein said sensor is configured to measure a plurality of second sample attribute values for said second sample flow, and wherein said control system is configured to receive said plurality of second sample attribute values from said sensor and to filter said plurality of second sample attribute values to produce a filtered second sample attribute value, and wherein said control system is configured to display said filtered second sample attribute value on said display unit.

9. (Original) The monitoring system of claim 7, wherein said control system is configured to determine whether said first sample attribute value is outside of a first sample attribute value range bounded by a low first sample attribute value and a high first sample attribute value, and wherein said control system is configured to generate an out-of-tolerance signal upon determining that said first sample attribute value is outside of said first sample attribute value range.

10. (Original) The monitoring system of claim 9, wherein said first sample attribute value range is a primary first sample attribute value range and said low first sample attribute value is a primary low first attribute value, and wherein said high first sample attribute value is a primary high first sample attribute value, and wherein said control system is further configured to determine whether said first sample attribute value is outside of a secondary first sample attribute value range bounded by a secondary low first sample attribute value and a secondary high first sample attribute value, said secondary first sample attribute value range being larger than said primary first sample attribute value range, and further comprising a processing tool configured to use said first chemical mixture in processing a semiconductor substrate, and wherein upon a determination that said first sample attribute value is outside of a secondary first sample attribute value range, said control system is configured to transmit an inhibit signal to said processing tool for said first chemical vessel, and wherein said processing tool is configured to refrain from using said first chemical mixture in processing upon receipt of said inhibit signal for said first chemical vessel.

11. (Currently amended) A [[The]] monitoring system of claim 1, comprising:

a first chemical vessel containing a first chemical mixture;

a second chemical vessel containing a second chemical mixture; and

a sensor configured to selectively receive a first sample flow of said first chemical mixture from said first chemical vessel and to selectively receive a second sample flow of said second chemical mixture from said second chemical vessel, wherein said sensor is configured to measure a first sample attribute of said first sample flow and a second sample attribute of said second sample flow;

wherein said first chemical mixture comprises a first bulk attribute value, and further comprising a control system configured to receive said first sample

attribute value and said second sample attribute value from said sensor, wherein said control system is configured to input said first sample attribute value into a first attribute control algorithm to calculate a first attribute control output, and wherein said control system is further configured to direct the adjusting of said first bulk attribute value according to said first attribute control output.

12. (Original) The monitoring system of claim 11, wherein said control system is configured to determine a first attribute error value from said first sample attribute value and a first attribute setpoint value, and wherein said first attribute control output comprises a first attribute control response time based on said first sample attribute value, and wherein if said first attribute error value is less than a first attribute dead band value, said control system is configured to set said first attribute control response time to zero, and wherein if said first attribute error value is greater than a first attribute dead band value, said control system is configured to calculate said first attribute control response time from said first attribute error value.

13. (Original) The monitoring system of claim 11, wherein said first bulk attribute value is a concentration of a first chemical within said first chemical mixture, and further comprising a first chemical supply configured to be in fluid communication with said first chemical vessel, and wherein said control system is configured to direct the transporting of a first chemical supply flow from said first chemical supply to said first chemical vessel to increase said first chemical concentration within said first chemical mixture.

14. (Original) The monitoring system of claim 13, wherein said first chemical mixture further comprise a second chemical having a second chemical concentration within said first chemical mixture, and further comprising a second chemical supply configured to be in fluid communication with said first chemical vessel, and wherein said control system is configured to direct the transporting of a second chemical supply flow

from said second chemical supply to said first chemical vessel to decrease said first chemical concentration within said first chemical mixture.

15. (Original) The monitoring system of claim 13, wherein said second chemical mixture comprises a first chemical having a first chemical concentration within said second mixture, and wherein said first chemical supply is configured to be in fluid communication with said second chemical vessel, and wherein said control system is configured to direct the transporting of a first chemical supply flow from said first chemical supply to said second chemical vessel to increase said first chemical concentration within said second chemical mixture.

16-45. (Canceled)